

## REMARKS

Claim 1 is amended to remove recitation of specific hydrophilic groups because such specificity is unwarranted and unduly narrowing. The specific hydrophilic groups were previously added to further prosecution at the behest of the Examiner, but have not resulted in a Notice of Allowance, and therefore are being removed from the claim. Support is found in the claims as originally filed and the specification.

Applicants thank the Examiner for indication that the 35 U.S.C. §112, first paragraph, rejection made in the Office Action of January 27, 2005, was overcome by Applicants' remarks filed February 17, 2005.

Claims 11-13 were objected to under 37 C.F.R. 1.75(c) as allegedly improperly dependent. It is asserted in the Office Action that claims 11, 12, and 13, are broader than claim 1 in that the recited formulas may not be water-soluble or contain a hydrophilic group incorporated into the base chain. For at least the following reasons, Applicants traverse the objection.

Applicants note claims 11-13 are dependent claims, and therefore **must** include all the features of claim 1. Claim 1 requires that the polymeric dye be water-soluble and have a hydrophilic group incorporated into the base chain. These features must be present in the composition of claims 11-13, and the additional features defined by each of claim 11, claim 12, and claim 13 must be read as additions to, not substitutions for, the claimed features of claim 1. Thus, proper reading of claims 11-13 requires that the compositions defined by those claims contain a water-soluble hyperbranched polymer having a hydrophilic group incorporated into the polymer base chain.

The Patent Office asserts that where  $R^7$  is a linear or branched alkyl (claims 11 and 12), or where both  $R^8$  and  $R^9$  are selected from a linear or branched alkyl (claim 13), no hydrophilic group would be present, and the polymer would not be water-soluble. However, the Patent Office is overlooking the remaining portions of the monomers in each claim. Any of  $M^1$ ,  $M^2$ ,  $M^3$ ,  $M^4$ ,  $M^5$ , or  $M^6$  in the respective claims can contain an unreacted hydrophilic group, which would be part of the base chain of the hyperbranched polymer. In fact, because a dependent claim must retain

all of the features of the claim from which it depends, it is required that at least one of the components of the monomer claimed in any of claims 11, 12, or 13 contain a water-soluble group in the base chain that does not undergo reaction on polymerization.

For at least the above reasons, reconsideration and withdrawal of the objection are in order and are respectfully solicited.

Claims 1 and 10-18 were rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. This rejection is directed to language that is no longer present in independent claim 1, from which all other claims depend, and therefore is moot. Withdrawal of the rejection is in order and is respectfully requested.

The claims as herein presented were originally presented in the Preliminary Amendment submitted June 30, 2004, with a Request for Continued Examination. In response to the Preliminary Amendment, the Patent Office issued an Office Action September 21, 2004, rejecting claims 1 and 10-18 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. It was alleged that the phrase "a water-soluble hyperbranched polymeric dye comprising a hyperbranched polymer having a dye chromophore and a hydrophilic group incorporated into the polymer base chain," and in particular the terms "water-soluble" and "hydrophilic," did not satisfy the written description requirement "since there does not appear to be a written description requirement of the phrase in the application as originally filed" (*see* Office Action mailed September 21, 2004, at page 3). In the interest of furthering prosecution, Applicants will again address this rejection with regard to the present claims. Applicants' again traverse this rejection, for reasons already of record, and for at least the following reasons.

The Patent Office points to *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163 for support of the 112, first paragraph, rejection. *In re Wright* was directed to whether the disclosure of a method of forming images using photosensitive microcapsules which describes removal of microcapsules from a surface and warns that capsules not be disturbed prior to formation of the image taught the absence of permanently fixed microcapsules, thereby supporting the amended claim language requiring that microcapsules be "not permanently fixed" to

the underlying surface. The court held the specification adequately disclosed and supported the language "not permanently fixed." MPEP 2163 discusses the requirements under 35 U.S.C. §112, first paragraph. In particular, MPEP 2163 provides the following:

... An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). ...

... While there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure. ...

... The fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. See, e.g., *Vas-Cath, Inc.*, 935 F.2d at 1563-64, 19 USPQ2d at 1117. ...

... The absence of definitions or details for well-established terms or procedures should not be the basis of a rejection under 35 U.S.C. 112, para. 1, for lack of adequate written description. ...

Applicants submit the legal precedents cited by the Patent Office support Applicants case for adequate disclosure, as follows.

The phrase rejected by the Patent Office includes two terms, "water-soluble" and "hydrophilic," to which the Patent Office objects as having no basis in the application as filed. Applicants notes these terms are linked as used in the claim, because "hydrophilic" describes a portion of the hyperbranched dye that is labeled "water-soluble." As known to one skilled in basic chemistry, for a substance to be water-soluble, it must have hydrophilic groups accessible for interaction with water or a water-like solvent, such as alcohol. Thus, Applicants use of the term "hydrophilic" recites only what is already apparent to one skilled in the art, that is, the presence of a group capable of interacting with water must be present in the hyperbranched polymeric dye to make it water-soluble. Because the hyperbranched polymeric dye is formed by reaction of monomers, and is not further reacted or acted on after formation (contrast Sacripante et al., US 6,025,412), the hydrophilic groups must be present during and after formation of the hyperbranched polymeric dye. In order to

avoid loss of the hydrophilic groups during polymerization, it would be apparent to one of ordinary skill in the art of chemistry that the hydrophilic groups be incorporated into the base chain of one or more monomer forming the polymer, and therefore would be present in the resultant polymer base chain. Examples of reactive monomers used to form the polymers of the claimed invention are set forth in the specification at page 6, line 22, through page 7, line 12, and further exemplified by two specific structures on pages 8 and 9, and by the hyperbranched polymeric dyes set forth in the Examples at page 11, line 19, through page 12, line 29. As presented in previous responses, the hydrophilic group can be in any portion of the monomers forming the polymeric base chain, but are not formed by reaction of two monomers.

As indicated above, the presence of hydrophilic groups in the polymeric base chain is indicated within the specification, both expressly through the exemplary structures and exemplified inventive dyes, and implicitly and/or inherently as necessary for formation of a water-soluble substance, and would be recognized by one of ordinary skill in the art of chemistry as disclosed in the specification. Therefore, the question becomes whether the term "water-soluble" is adequately supported by the specification as filed.

As described in the specification at page 2, lines 12-13, and as known to one of ordinary skill in the art of chemistry, "[a] dye is a colorant which is dissolved in the carrier medium" (emphasis added). It is well known in the chemical arts that when something is "dissolved," no particulate form remains in the solution. Because the claimed colorant is a dye, it must be capable of being dissolved in the carrier medium of the ink jet ink. The carrier medium provided by the claimed invention is water, and optionally water-miscible organic solvents such as alcohols, ketones, ethers, etc., as listed in the specification at page 9, line 22, - page 10, line 7. By definition of the term "dissolved," the hyperbranched polymeric dye must be water-soluble, as set forth in the specification, and as would be apparent to one of ordinary skill in the art of chemistry. The specific examples of suitable hyperbranched polymers useful in forming the hyperbranched polymeric dye as listed, for example, in the specification at least at page 4, lines 14-19, and page 7, lines 13-16, are water-soluble polymers. The lack of particle formation upon forming the claimed ink jet ink using a hyperbranched polymeric dye of the invention was confirmed in the Declaration of co-inventor Huijuan Chen submitted April 16, 2004.

Applicants submit the terms "water-soluble" and "hydrophilic" are well known in the chemical arts to have established meanings, and the use of such terms in the claims are supported by the specification as filed, either explicitly, inherently, or implicitly, and would be understood by one of ordinary skill in the art of chemistry to be necessary requirements for the hyperbranched polymeric dye. As such, any rejection under 35 U.S.C. §112, first paragraph, of these terms is improper.

Applicants believe that the above comments should address all concerns of the Patent Office as evidenced by past prosecution history. Should any other issues be identified, Applicants urge the Examiner to contact Applicants' undersigned representative to discuss such issues telephonically to further prosecution.

No substantive rejection being of record, prompt and favorable action in the form of a Notice of Allowance are respectfully solicited. Should the Examiner require anything further, or have any questions regarding the application, the Examiner is invited to contact Applicants' undersigned representative.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Kathleen Neuner Manne', written over a horizontal line.

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**If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.**